

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Higher Ground LLC	)	File No. SES-LIC-20150616-00357
	)	
Application for Blanket License to Operate C-	)	Call Sign E150095
Band Mobile Earth Terminals	)	

**OPPOSITION OF  
SOUTHERN COMPANY SERVICES, INC.**

Southern Company Services, Inc. (“Southern”), on behalf of itself and its operating affiliates, submits the following *ex parte* comments in opposition to the above-referenced application and waiver request of Higher Ground LLC (“Higher Ground”) for authority to operate mobile earth stations (which it calls “SatPaqs”) in the 5925-6425 MHz (“6 GHz”) band.<sup>1</sup>

By way of introduction, Southern Company Services, Inc. is a wholly-owned subsidiary service company of Southern Company, a super-regional energy company in the Southeast United States. Southern Company also owns four electric utility subsidiaries – Alabama Power Company, Georgia Power Company, Gulf Power Company, and Mississippi Power Company – which provide retail and wholesale electric service throughout a 120,000 square mile service territory in Georgia, most of Alabama, and parts of Florida and Mississippi. Members of the Southern Company family use a variety of communications technologies, including FCC

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<sup>1</sup> By *Public Notice* released on November 4, 2015 (Report No. SES-01795), this proceeding was designated as “permit-but-disclose” for purposes of the FCC’s rules governing *ex parte* communications.

licensed spectrum, to support the safe and efficient delivery of energy services to their customers. Southern is also engaged in power generation, and in the distribution of natural gas, in a number of markets around the country. The following comments primarily relate to Southern's use of microwave in connection with its electric utility operations.

Southern holds more than 60 point-to-point microwave licenses that collectively authorize the operation of about 150 frequency paths in the 6 GHz band. Southern also holds licenses for microwave facilities in higher frequency bands where shorter frequency paths can be accommodated. However, because of Southern's extensive service area, and the need to communicate with facilities in very rural areas, the 6 GHz band is the only band that can accommodate Southern's bandwidth and performance objectives over very long paths.

Southern's fixed microwave facilities support a variety of utility applications, including voice and data communications between and among energy control centers, transmission and distribution substations, power generating stations, and the other utilities with which Southern must coordinate in real-time for management of the interconnected power grid. Microwave is also used to backhaul voice and data from land mobile radio systems used by field crews to coordinate the safe and efficient construction, maintenance, and restoration of Southern's electric facilities.<sup>2</sup>

Southern also uses point-to-point microwave to backhaul data from supervisory control and data acquisition ("SCADA") systems. These systems allow Southern and its operating

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<sup>2</sup> Southern Company's field crews rely on mobile radio services provided by Southern Communications Services, Inc. d/b/a SouthernLINC Wireless ("SouthernLINC"), a wholly-owned subsidiary of Southern Company. SouthernLINC also provides commercial mobile radio service to public safety agencies, industrial users, and individuals throughout Southern's electric operating area. Disruption of Southern's microwave facilities could also disrupt SouthernLINC's provision of mobile voice and data services to these other users.

companies to remotely monitor and control a multitude of devices on the power grid, thereby improving electric service to the millions of residential, commercial and industrial customers. Microwave systems also allow Southern to closely coordinate power flows and minimize service disruptions among many other wholesale and retail power distributors (*e.g.*, municipally-owned utilities, rural electric cooperatives, and other investor-owned electric utilities) with which Southern's electric system is interconnected. Low latency is vital for many command and control applications, such as load management, protective relaying, and SCADA. Southern's electric operating companies generally require latency levels of less than 100 milliseconds for command and control applications, with any increase in latency above 250 milliseconds to be unacceptable. Thus, even short disruptions to these communications systems can have detrimental impacts on operation of the electric system.

Because Southern relies on fixed microwave communications facilities to support its electric operations and its ongoing maintenance of this critical infrastructure, Southern shares the serious concerns raised by the other parties that have filed in opposition to the Higher Ground application and waiver request.<sup>3</sup> Southern has particular concerns with regard to the following:

- Lack of effective coordination: Higher Ground seeks to substitute the time-tested, objective and transparent process for frequency coordination with its unilateral judgment, opaque algorithms, and untested automated processes that only Higher Ground and Intelsat, its satellite partner, believe will be sufficient to prevent interference to terrestrial microwave systems. Even if all other licensees are willing to trust Higher Ground to protect them from interference, there is no way

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<sup>3</sup> See, *e.g.*, the following submissions in IBFS File No. SES-LIC-20150616-00357: Comments of CenturyLink in Opposition to Application, filed September 9, 2015; Fixed Wireless Communications Coalition ("FWCC") Petition to Deny, filed September 11, 2015; Comments of National Spectrum Management Association, filed October 6, 2015; Letter from Vince Krog, State Radio Engineer, State of Hawaii, dated July 30, 2016; Letter from AJ Burton, Director, Federal Regulatory Affairs, Frontier Communications, dated August 22, 2016; Comments of Nebraska Public Power District, filed September 2, 2016; and Letter from Brett Kilbourne, Vice President and Deputy General Counsel, Utilities Technology Council, dated September 6, 2016.

to verify that this trust is well-earned. This is of particular concern given the deficiencies that other parties have noted with respect to the assumptions on which Higher Ground's proposed algorithms and processes are based.<sup>4</sup>

- Inability to quickly identify and correct interference: It will be almost impossible for fixed microwave licensees to timely identify the specific source(s) of interference from Higher Ground's SatPac devices, and/or to expect Higher Ground to take prompt and effective remedial action to prevent future interference. Higher Ground has offered to review transmission logs only after it receives a detailed interference complaint to see if SatPac operations were the source of interference. However, it makes no commitments on how quickly such issues will be reviewed, how it will determine whether a SatPac device was the cause, or how such interference will be prevented in the future.<sup>5</sup> Fixed service licensees should not have to spend time and resources notifying Higher Ground of every case of unexplained interference just to learn whether a SatPac device might have been the cause. If licensees fail to report all interference cases to Higher Ground it will not necessarily mean that SatPac devices are not to blame or that the interference is "tolerable;" rather, it will represent the sad truth that such after-the-fact notifications will not resolve the disruption caused by prior interference nor will it prevent future cases of interference. The International Bureau, Wireless Telecommunications Bureau and Office of Engineering and Technology have already concluded that it is inappropriate to simply rely on incumbent licensees to report harmful interference after suffering degradation in service from users operating under a nationwide authorization, and where it is not clear that the nationwide licensee would be able to reasonably address the harmful interference in any event.<sup>6</sup>
- Lack of incentives for Higher Ground to prevent or correct interference: With no need to coordinate with or seek concurrence from any other licensees in the band, Higher Ground's overriding incentives will be to maximize the number of customers that use its mobile satellite service, and to reduce operational impediments that would otherwise detract from its customers' ability to use the service anywhere, anytime.
- Interference will have a disproportionate impact on fixed microwave systems and provision of critical services. Southern relies on fixed microwave for the relay of SCADA and other data needed to control the power grid. Southern and other

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<sup>4</sup> See, e.g., FWCC Petition to Deny, filed September 11, 2015, at 10; Letter from Cheng-yi and Mitchell Lazarus, Counsel to FWCC, filed July 15, 2016, attachment at 11.

<sup>5</sup> Letter from Adam D. Krinsky, counsel for Higher Ground, to Marlene H. Dortch, Secretary, FCC, dated August 5, 2016, and filed in the above-referenced application proceeding.

<sup>6</sup> In the Matter of Utilities Telecom Council and Winchester Cator, LLC, *Order*, 28 FCC Rcd 7051 (OET, WTB and IB 2013).

utilities typically design key communications systems (*e.g.*, for distribution control, transmission energy management, or generation control) to a reliability standard of 99.999 percent (26 seconds of downtime per year or less). As noted above, Southern's electric operating companies require extremely low latency for command and control operations. Thus, interference to Southern's microwave systems could have cascading and severely disruptive effects on the delivery of electric service over large service areas.

- Higher Ground anticipates greater use of SatPaq devices in rural areas, where the need for C-band fixed microwave is greatest. Higher Ground suggests that its service will be particularly useful in areas unserved by terrestrial CMRS networks. Terrestrial fixed services are often deployed in rural areas for the same reason; *i.e.*, that other high capacity communications options are not available or would be prohibitively expensive to deploy (*e.g.*, fiber optic systems). Thus, there will likely be a higher concentration of SatPaq users (and interference issues) in the same areas where fixed service licensees have deployed fixed systems operating in the C-band, due to the longer path lengths available with these frequencies.
- Higher Ground seeks through rule waiver a major shift in policy that should only be considered through rulemaking. Mobile operations have been excluded from the 6 GHz band precisely because of the well-recognized difficulties in coordinating mobile use with fixed systems in the same band. Although the Commission has allowed such sharing in a few bands, it has done so only through rulemaking and the adoption of transparent and objective criteria for coordinating, authorizing, and, if necessary, terminating mobile use if interference is predicted or detected.<sup>7</sup> Granting a waiver to Higher Ground would establish precedent that virtually any band is available for mixed use provided the applicant commits to using an internal, proprietary mechanism that will, at least in theory, protect co-primary licensees from interference and, provided the licensee commits to reviewing interference complaints documented by the incumbent fixed system users.

For all of these reasons, Southern Company Services, Inc. respectfully urges the Commission to deny the above-referenced application of Higher Ground LLC. At most, the

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<sup>7</sup> *E.g.*, Amendment of the Commission's Rules with Regard to Commercial Operations in the 3550-3650 MHz Band, *Report and Order and Second Further Notice of Proposed Rulemaking*, 30 FCC Rcd 3959 (2015); and Unlicensed Operation in the TV Broadcast Bands, Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band, *Second Report and Order and Memorandum Opinion and Order*, 23 FCC Rcd 16807 (2008).

Commission should open a rulemaking proceeding to determine whether, and how, mobile satellite service could be accommodated in the 6 GHz band without disruption to fixed systems.

Respectfully submitted,

**SOUTHERN COMPANY SERVICES, INC.**

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